MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: January 2023
Obtained Date: 15th February 2023
Publication Date: 21st February 2023

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 2nd August 2022 by the NSW Environment Protection Authority (EPA).

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	Next sample in March 2023					
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	Next Sample in February 2023					
	Conductivity	µs/cm							
	Oil & Grease	mg/L							
	pH	pH							

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred from this monitoring location during January 2023						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.	No discharge occurred from this monitoring location during January 2023						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								

	TSS	mg/L	
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
	TSS	mg/L	
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or
	Conductivity	µs/cm	
	Oil & Grease	mg/L	

	pH	pH	within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day	
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
	Conductivity	µs/cm		

	Oil & Grease	mg/L	consecutive period	
	pH	pH		
45 (ECWDP)	Oil & Grease	mg/L	not more than 12 hours after discharge commences	
	pH	pH		
	TSS	mg/L		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
46 (WCWDP)	Oil & Grease	mg/L	not more than 12 hours after discharge commences	
	pH	pH		
	TSS	mg/L		
	Oil & Grease	mg/L		
	pH	mg/L		
	TSS	pH		

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

MCC ID	Date	Start Time	Wind Speed (m/s)	MCCP $L_{Aeq\ 15min}$ dB	Limit $L_{Aeq\ 15min}$ (dB) Operations Criteria	MCCP $L_{Aeq\ 1min}$ dB	Limit $L_{A1\ (1\ min)}$ (dB) Operations Criteria	Weather Rain (mm)	Exceedance (Yes / No)
NM1	18/01/2023	22:30	0.4	IA	35	IA	45	0.0	NA
NM2	18/01/2023	23:30	0.4	IA	39	IA	45	0.0	NA
NM3	18/01/2023	23:26	0.3	IA	35	IA	45	0.0	NA
NM4	18/01/2023	23:00	0.4	IA	35	IA	45	0.0	NA
NM5	18/01/2023	22:00	0.4	<25	35	25	45	0.0	NA
NM6	18/01/2023	23:59	0.4	IA	35	IA	45	0.0	NA

MCC ID = Locations as per the EPL No.20221.
ND = No data due to high prevailing winds during the attended noise monitoring event.
Italicised text indicates wind speed exceeds the 3.0m/s maximum for noise monitoring.
NM = Not Measurable. If site noise is noted as NM, <20 dB or <30 dB, this means some noise was audible but could not be quantified.
IA = Site noise was inaudible at the monitoring location.
N/A in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in the project approval.

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	10	95.6	114.9	120	No
	Vibration	mm/s		10	0.16	0.81	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

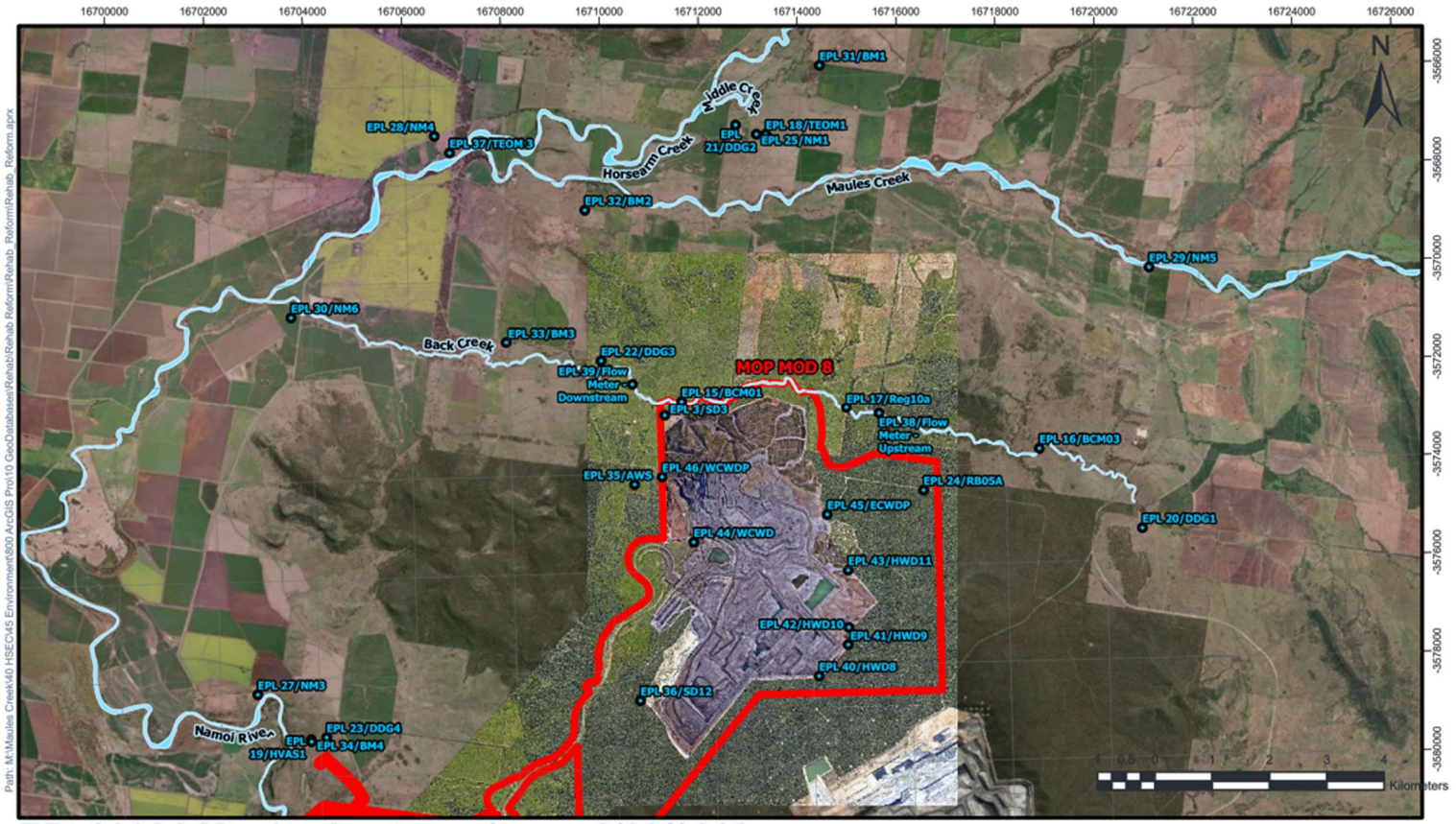
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m³ month	PM_{10}	5.5	30	No
37 (TEOM3)	Continuous	µg/m³ month	PM_{10}	12.7	30	No
19 (HVAS)	5 days	µg/m³	PM_{10}	7.9	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m² month	1.0	4	No
21 (DDG2/MC2)	Monthly	g/m² month	0.7	4	No
22 (DDG3/MC3)	Monthly	g/m² month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m² month	0.9	4	No

Figure 1 – EPL 20221 Monitoring Locations



EPL20221 Monitoring Locations - 2/08/2022

Maules Creek Coal

Legend

- EPL Monitoring locations

05 Project Boundary_Boundaries

- MCCM Project Boundary (Mod 8)

Scale: 1:88,442

Author: shenanewman

Date Exported: 16/09/2022 11:51 AM

Spatial Reference
Name: GDA2020 MGA Zone 56

MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: February 2023
Obtained Date: 15th March 2023
Publication Date: 16th March 2023

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 2nd August 2022 by the NSW Environment Protection Authority (EPA).

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	Next sample in March 2023					
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	1	24/02/2023	Yes			15
	Conductivity	µs/cm							1310
	Oil & Grease	mg/L							<5
	pH	pH							8.16

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred from this monitoring location during February 2023						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

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Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.	No discharge occurred from this monitoring location during February 2023						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								

	TSS	mg/L	
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
	TSS	mg/L	
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or
	Conductivity	µs/cm	
	Oil & Grease	mg/L	

	pH	pH	within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day	
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
	Conductivity	µs/cm		

	Oil & Grease	mg/L	consecutive period	
	pH	pH		
45 (ECWDP)	Oil & Grease	mg/L	not more than 12 hours after discharge commences	
	pH	pH		
	TSS	mg/L		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
46 (WCWDP)	Oil & Grease	mg/L	not more than 12 hours after discharge commences	
	pH	pH		
	TSS	mg/L		
	Oil & Grease	mg/L		
	pH	mg/L		
	TSS	pH		

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

MCC ID	Date	Start Time	Wind Speed (m/s)	MCCP $L_{Aeq\ 15min}$ dB	Limit $L_{Aeq\ 15min}$ (dB) Operations Criteria	MCCP $L_{Aeq\ 1min}$ dB	Limit $L_{A1\ (1\ min)}$ (dB) Operations Criteria	Weather Rain (mm)	Exceedance (Yes / No)
NM1	01/02/2023	23:00	0.2	22	35	25	45	0.0	NA
NM2	02/02/2023	00:00	0.2	29	39	35	45	0.0	NA
NM3	02/02/2023	00:35	0.2	IA	35	IA	45	0.0	NA
NM4	01/02/2023	23:30	0.3	23	35	25	45	0.0	NA
NM5	01/02/2023	22:30	0.1	25	35	29	45	0.0	NA
NM6	01/02/2023	23:42	0.1	IA	35	IA	45	0.0	NA

MCC ID = Locations as per the EPL No.20221.
ND = No data due to high prevailing winds during the attended noise monitoring event.
Italicised text indicates wind speed exceeds the 3.0m/s maximum for noise monitoring.
NM = Not Measurable. If site noise is noted as NM, <20 dB or <30 dB, this means some noise was audible but could not be quantified.
IA = Site noise was inaudible at the monitoring location.
N/A in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in the project approval.

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	11	93.4	116.9	120	No
	Vibration	mm/s		11	0.20	0.90	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

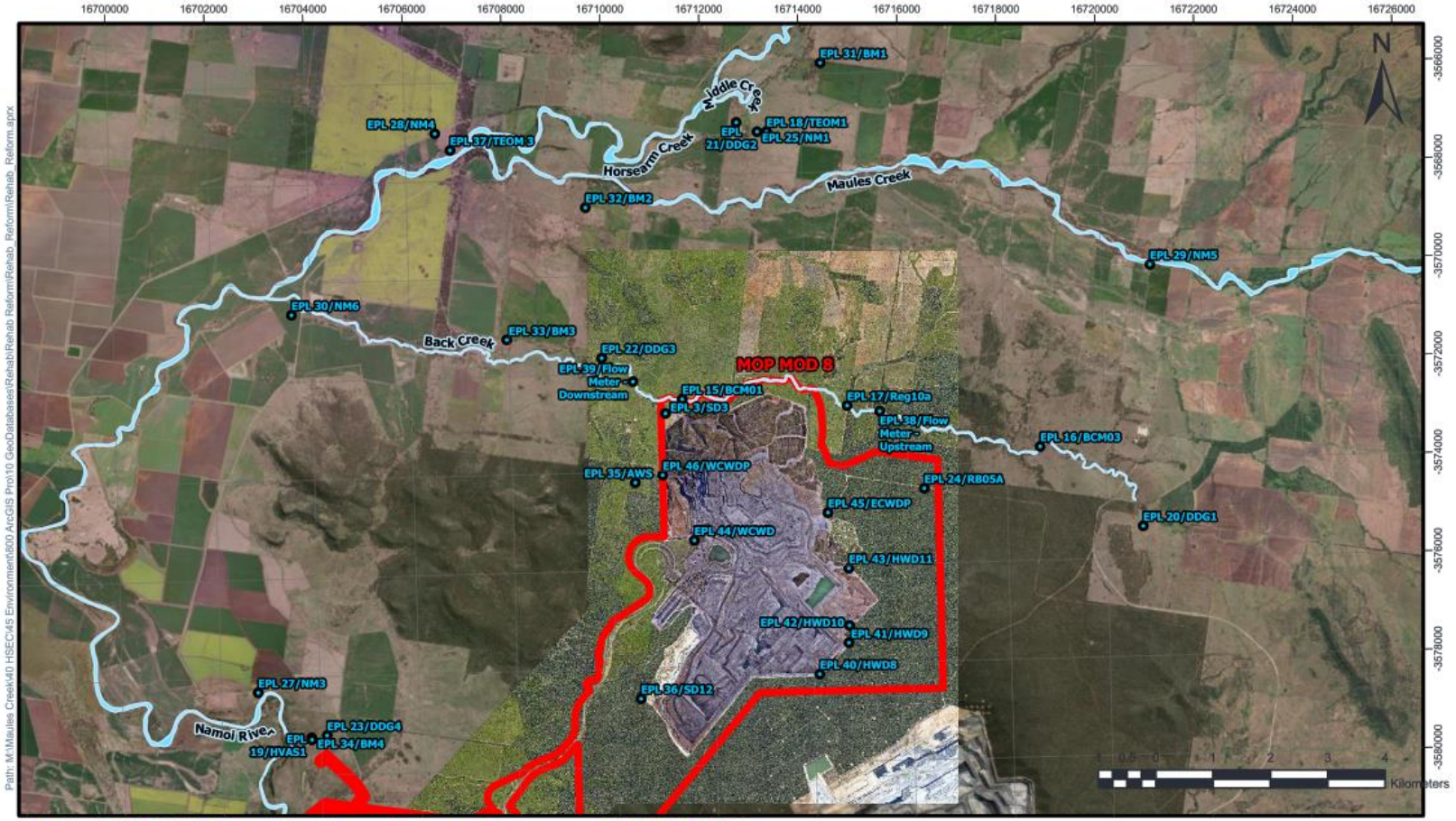
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m³ month	PM_{10}	6.1	30	No
37 (TEOM3)	Continuous	µg/m³ month	PM_{10}	12.5	30	No
19 (HVAS)	5 days	µg/m³	PM_{10}	8.5	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m² month	1.0	4	No
21 (DDG2/MC2)	Monthly	g/m² month	1.0	4	No
22 (DDG3/MC3)	Monthly	g/m² month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m² month	1.0	4	No

Figure 1 – EPL 20221 Monitoring Locations



EPL20221 Monitoring Locations - 2/08/2022

Maules Creek Coal

Legend

- EPL Monitoring locations

05 Project Boundary_Boundaries

- MCCM Project Boundary (Mod 8)

Scale: 1:88,442

Author: shenanewman

Date Exported: 16/09/2022 11:51 AM

Spatial Reference
Name: GDA2020 MGA Zone 56

WHITEHAVEN

MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: March 2023
Obtained Date: 18th April 2023
Publication Date: 19th April 2023

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 2nd August 2022 by the NSW Environment Protection Authority (EPA).

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	0	Dry – Next sample in June 2023				
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly	0	Dry – Next sample in June 2023				
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly	0	Dry – Next sample in June 2023				
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly	1	10/03/23	Yes			7.61
	Conductivity	µs/cm							1850
	TDS	mg/L							1070

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	1	20/03/2023	Yes			<5
	Conductivity	µs/cm							1290
	Oil & Grease	mg/L							<5
	pH	pH							8.17

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred from this monitoring location during March 2023						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.	No flow was recorded at these sites.						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								

	TSS	mg/L	
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
	TSS	mg/L	
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or
	Conductivity	µs/cm	
	Oil & Grease	mg/L	

	pH	pH	within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
	TSS	mg/L	
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day
	Conductivity	µs/cm	
	Oil & Grease	mg/L	
	pH	pH	
	TSS	mg/L	
	Conductivity	µs/cm	

	Oil & Grease	mg/L	consecutive period	
	pH	pH		
45 (ECWDP)	Oil & Grease	mg/L	not more than 12 hours after discharge commences	
	pH	pH		
	TSS	mg/L		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
46 (WCWDP)	Oil & Grease	mg/L	not more than 12 hours after discharge commences	
	pH	pH		
	TSS	mg/L		
	Oil & Grease	mg/L		
	pH	mg/L		
	TSS	pH		

Table 5 – Controlled and/or Wet Weather Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
47 (SD7)	TSS	mg/L	not more than 12 hours after discharge commences	1	21/03/23	Yes			6
	Conductivity	µs/cm							900
	Oil & Grease	mg/L							<5
	pH	pH							8.20

*Due to temporary inclusion, site 47 is not included in figure 1, EPL 20221 Monitoring Locations

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

MCC ID	Date	Start Time	Wind Speed (m/s)	MCCP $L_{Aeq\ 15min}$ dB	Limit $L_{Aeq\ 15min}$ (dB) Operations Criteria	MCCP $L_{Aeq\ 1min}$ dB	Limit $L_{A1\ (1\ min)}$ (dB) Operations Criteria	Weather Rain (mm)	Exceedance (Yes / No)
NM1	09/03/2023	22:30	0.5	22	35	35	45	0.0	NA
NM2	09/03/2023	23:30	0.2	26	39	30	45	0.0	NA
NM3	09/03/2023	23:36	0.3	IA	35	IA	45	0.0	NA
NM4	09/03/2023	23:00	0.7	25	35	28	45	0.0	NA
NM5	09/03/2023	22:00	1.6	IA	35	IA	45	0.0	NA
NM6	09/03/2023	23:56	0.2	<20	35	<20	45	0.0	NA

MCC ID = Locations as per the EPL No.20221.
ND = No data due to high prevailing winds during the attended noise monitoring event.
Italicised text indicates wind speed exceeds the 3.0m/s maximum for noise monitoring.
NM = Not Measurable. If site noise is noted as NM, <20 dB or <30 dB, this means some noise was audible but could not be quantified.
IA = Site noise was inaudible at the monitoring location.
N/A in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in the project approval.

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	6	94	107.8	120	No
	Vibration	mm/s		6	0.19	0.64	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

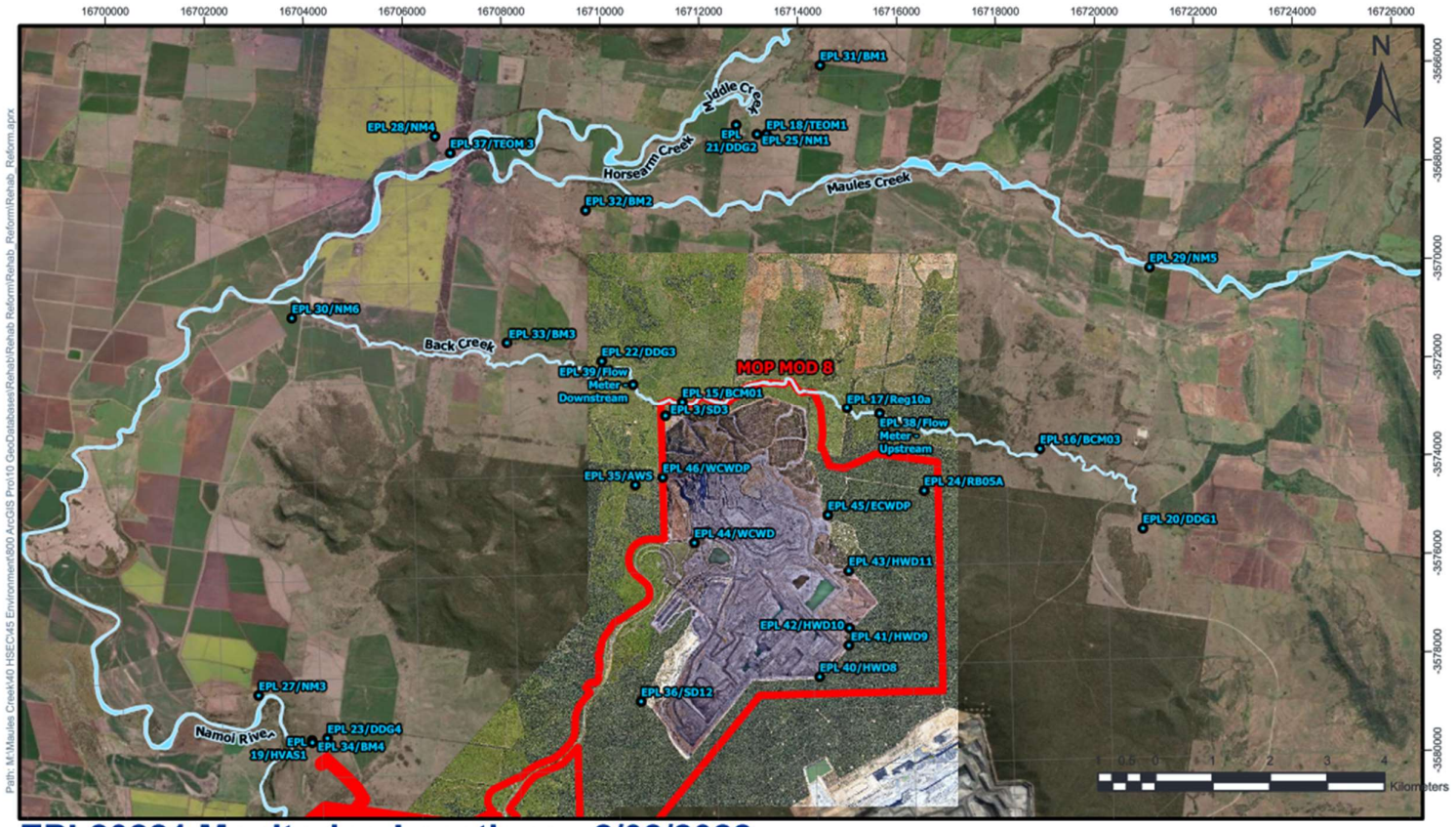
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m³ month	PM_{10}	6.9	30	No
37 (TEOM3)	Continuous	µg/m³ month	PM_{10}	13.1	30	No
19 (HVAS)	5 days	µg/m³	PM_{10}	8.9	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m² month	1.0	4	No
21 (DDG2/MC2)	Monthly	g/m² month	1.1	4	No
22 (DDG3/MC3)	Monthly	g/m² month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m² month	1.1	4	No

Figure 1 – EPL 20221 Monitoring Locations



EPL20221 Monitoring Locations - 2/08/2022

Maules Creek Coal

Legend

- EPL Monitoring locations

05 Project Boundary_Boundaries

- MCCM Project Boundary (Mod 8)

Scale: 1:88,442

Author: shenanewman

Date Exported: 16/09/2022 11:51 AM

Spatial Reference
Name: GDA2020 MGA Zone 56

MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: April 2023
Obtained Date: 15th May 2023
Publication Date: 16th May 2023

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 2nd August 2022 by the NSW Environment Protection Authority (EPA).

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	Next sample in June 2023					
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly	Next sample in June 2023					
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly	Next sample in June 2023					
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly	Next sample in June 2023					
	Conductivity	µs/cm							
	TDS	mg/L							

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	Next sample in May 2023					
	Conductivity	µs/cm							
	Oil & Grease	mg/L							
	pH	pH							

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred from this monitoring location						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.	No flow was recorded at these sites.						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within	1	19/04/23	Yes	NA	Na	Na	29.5
	Conductivity	µs/cm								170

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
	Oil & Grease	mg/L	12hours of discharge caused by 38.4mm in a 5 Day consecutive period							<10
	pH	pH								7.67
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
	pH	pH								
	TSS	mg/L								

*update to report to remove incorrect results

Table 5 – Controlled and/or Wet Weather Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
47 (SD7)	TSS	mg/L	not more than 12 hours after discharge commences	1	17/04/23	Yes	N/A	N/A	46
	Conductivity	µs/cm							560
	Oil & Grease	mg/L							<10
	pH	pH							7.94

*Due to temporary inclusion, site 47 is not included in figure 1, EPL 20221 Monitoring Locations

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

Location	Start Date and Time	Wind		Stability Class	Very enhancing? [1]	Limits, dB [1]		Site levels, dB [2]		Exceedances, dB	
		Speed m/s	Direction [3]			$L_{Aeq,15minute}$	L_{Amax}	$L_{Aeq,15minute}$	L_{Amax}	$L_{Aeq,15minute}$	L_{Amax}
NM1	27/04/2023 22:30	0.4	251	F	No	35	45	IA	IA	Nil	Nil
NM2	27/04/2023 23:30	0.2	200	F	No	39	45	<20	<20	Nil	Nil
NM3	27/04/2023 23:23	0.5	224	F	No	35	45	<20	<20	Nil	Nil
NM4	27/04/2023 23:00	0.2	122	F	No	35	45	IA	IA	Nil	Nil
NM5	27/04/2023 22:04	0.8	281	F	No	35	45	IA	IA	Nil	Nil
NM6	27/04/2023 23:55	0.5	104	F	No	35	45	IA	IA	Nil	Nil

Notes: 1. Noise limits are adjusted by +5 dB during 'very enhancing meteorological conditions' in accordance with the NPfI.
2. Site-only LAeq,15minute, includes modifying factor penalties if applicable.
3. Degrees magnetic north, "-" indicates calm conditions.

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	10	94.02	108	120	No
	Vibration	mm/s		10	0.18	1.29	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

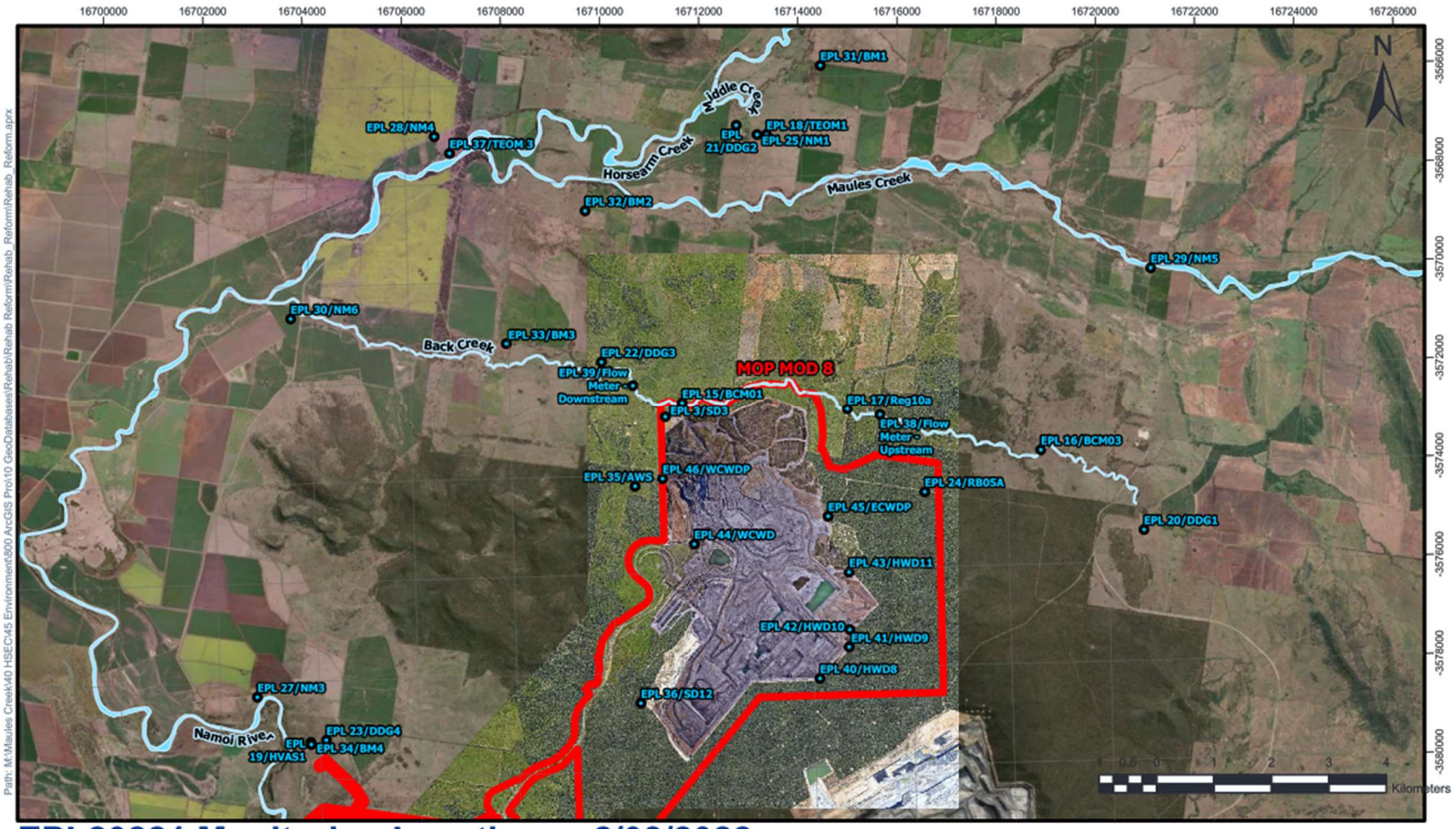
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m³ month	PM_{10}	7.2	30	No
37 (TEOM3)	Continuous	µg/m³ month	PM_{10}	13.2	30	No
19 (HVAS)	5 days	µg/m³	PM_{10}	9.0	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m² month	1.0	4	No
21 (DDG2/MC2)	Monthly	g/m² month	1.2	4	No
22 (DDG3/MC3)	Monthly	g/m² month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m² month	1.2	4	No

Figure 1 – EPL 20221 Monitoring Locations



EPL20221 Monitoring Locations - 2/08/2022

Maules Creek Coal

Legend

- EPL Monitoring locations

05 Project Boundary_Boundaries

- MCCM Project Boundary (Mod 8)

Scale: 1:88,442

Author: shenanewman

Date Exported: 16/09/2022 11:51 AM

Spatial Reference
Name: GDA2020 MGA Zone 56

MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: May 2023
Obtained Date: 15th June 2023
Publication Date: 16th June 2023

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 2nd August 2022 by the NSW Environment Protection Authority (EPA).

WHITEHAVEN COAL

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	Next sample in June 2023					
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly	Next sample in June 2023					
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly	Next sample in June 2023					
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly	Next sample in June 2023					
	Conductivity	µs/cm							
	TDS	mg/L							

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	1	15/05/2023	15/06/2023	NA	NA	23
	Conductivity	µs/cm							1240
	Oil & Grease	mg/L							<5
	pH	pH							8.42

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred from this monitoring location						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.	No flow was recorded at these sites.						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from these monitoring locations						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
	Oil & Grease	mg/L	12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	pH	pH								
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
45 (ECWDP)	Oil & Grease	mg/L	Not more than 12 hours after discharge commences	No discharge occurred from this monitoring location						
	pH	pH								
	TSS	mg/L								
46 (WCWDP)	Oil & Grease	mg/L	Not more than 12 hours after discharge commences	No discharge occurred from this monitoring location						
	pH	pH								
	TSS	mg/L								

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

MCC ID	Date	Start Time	Wind Speed (m/s)	MCCP $L_{Aeq\ 15min}$ dB	Limit $L_{Aeq\ 15min}$ (dB) Operations Criteria	MCCP $L_{Aeq\ 1min}$ dB	Limit $L_{A1\ (1\ min)}$ (dB) Operations Criteria	Weather Rain (mm)	Exceedance (Yes / No)
NM1	11/05/2023	22:30	0.6	<20	35	<20	45	0.0	NA
NM2	11/05/2023	23:30	1.0	IA	39	IA	45	0.0	NA
NM3	12/05/2023	0:22	1.5	IA	35	IA	45	0.0	NA
NM4	11/05/2023	23:00	0.5	NM	35	NM	45	0.0	NA
NM5	11/05/2023	22:00	0.6	IA	35	IA	45	0.0	NA
NM6	11/05/2023	23:55	1.1	IA	35	IA	45	0.0	NA

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	7	93.84	108.8	120	No
	Vibration	mm/s		7	0.13	0.67	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

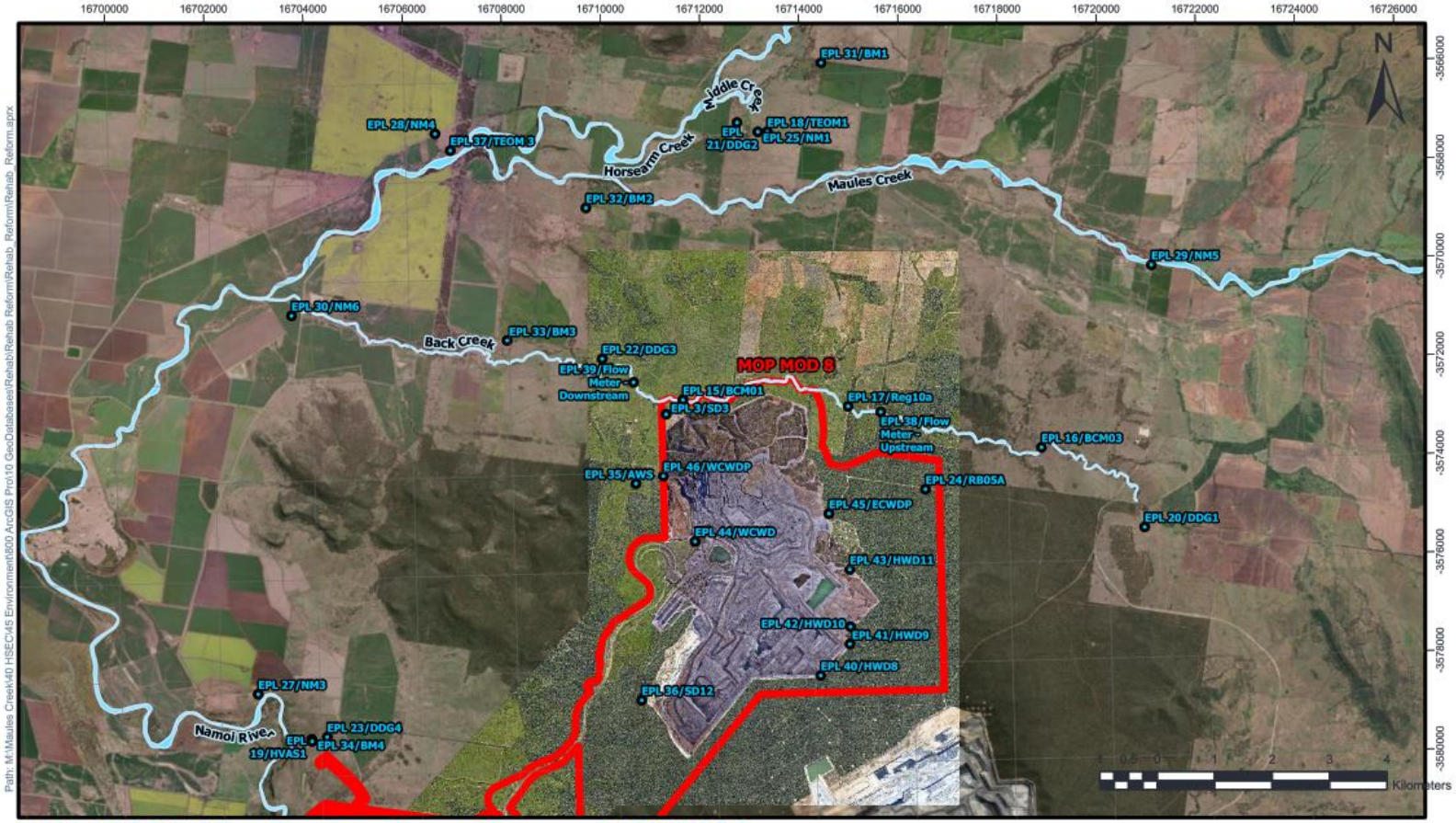
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m³ month	PM_{10}	7.7	30	No
37 (TEOM3)	Continuous	µg/m³ month	PM_{10}	13.7	30	No
19 (HVAS)	5 days	µg/m³	PM_{10}	10.7	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m² month	1.0	4	No
21 (DDG2/MC2)	Monthly	g/m² month	1.6	4	No
22 (DDG3/MC3)	Monthly	g/m² month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m² month	1.2	4	No

Figure 1 – EPL 20221 Monitoring Locations



EPL20221 Monitoring Locations - 2/08/2022

Maules Creek Coal

Legend

- EPL Monitoring locations

05 Project Boundary_Boundaries

- MCCM Project Boundary (Mod 8)

Scale: 1:88,442

Author: shenanewman

Date Exported: 16/09/2022 11:51 AM

Spatial Reference
Name: GDA2020 MGA Zone 56

WHITEHAVEN

MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: June 2023
Obtained Date: 17th July 2023
Publication Date: 19th July 2023

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 2nd August 2022 by the NSW Environment Protection Authority (EPA).

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	0	Dry				
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly	0	Dry				
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly	0	Dry				
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly	1	14/06/23	Yes			7.48
	Conductivity	µs/cm							1840
	TDS	mg/L							968

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	Next sample July 2023					
	Conductivity	µs/cm							
	Oil & Grease	mg/L							
	pH	pH							

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred from this monitoring location						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.	No discharge occurred during the reporting month						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from these monitoring locations						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
	Oil & Grease	mg/L	12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	pH	pH								
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
45 (ECWDP)	Oil & Grease	mg/L	Not more than 12 hours after discharge commences	No discharge occurred from this monitoring location						
	pH	pH								
	TSS	mg/L								
46 (WCWDP)	Oil & Grease	mg/L	Not more than 12 hours after discharge commences	No discharge occurred from this monitoring location						
	pH	pH								
	TSS	mg/L								

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

MCC ID	Date	Start Time	Wind Speed (m/s)	MCCP $L_{Aeq\ 15min}$ dB	Limit $L_{Aeq\ 15min}$ (dB) Operations Criteria	MCCP $L_{Aeq\ 1min}$ dB	Limit $L_{A1\ (1\ min)}$ (dB) Operations Criteria	Weather Rain (mm)	Exceedance (Yes / No)
NM1	7/06/2023	22:30	0.4	IA	35	IA	45	0.0	NA
NM2	7/06/2023	23:30	0.3	IA	39	IA	45	0.0	NA
NM3	7/06/2023	23:22	0.3	IA	35	IA	45	0.0	NA
NM4	7/06/2023	23:00	0.4	IA	35	IA	45	0.0	NA
NM5	7/06/2023	22:00	0.6	IA	35	IA	45	0.0	NA
NM6	7/06/2023	23:54	0.8	IA	35	IA	45	0.0	NA

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	12	89.31	99.80	120	No
	Vibration	mm/s		12	0.16	1.04	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

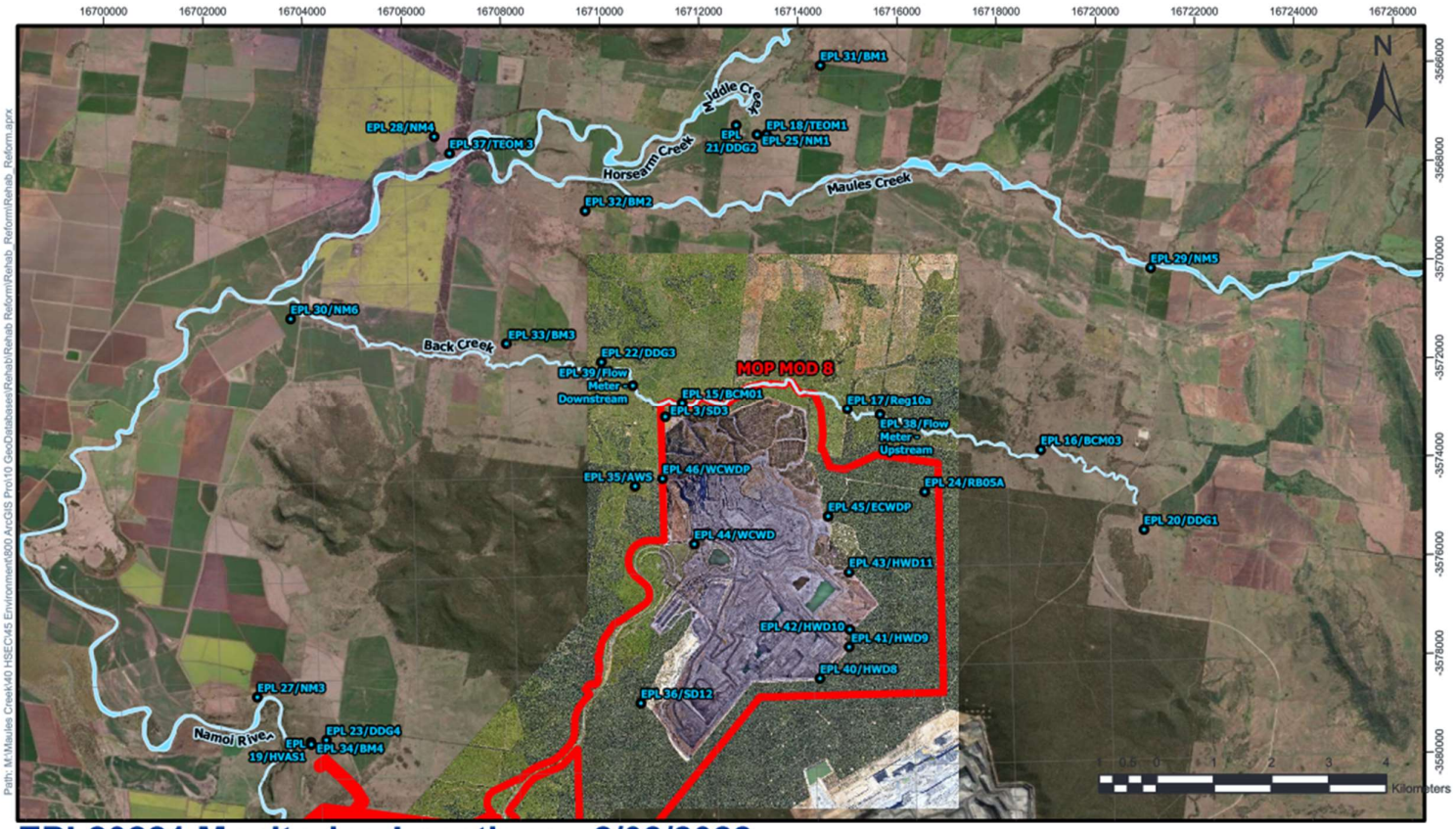
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m³ month	PM_{10}	8.1	30	No
37 (TEOM3)	Continuous	µg/m³ month	PM_{10}	13.4	30	No
19 (HVAS)	5 days	µg/m³	PM_{10}	11.0	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m² month	1.6	4	No
21 (DDG2/MC2)	Monthly	g/m² month	1.8	4	No
22 (DDG3/MC3)	Monthly	g/m² month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m² month	1.2	4	No

Figure 1 – EPL 20221 Monitoring Locations



EPL20221 Monitoring Locations - 2/08/2022

Maules Creek Coal

Legend

- EPL Monitoring locations

05 Project Boundary_Boundaries

- MCCM Project Boundary (Mod 8)

Scale: 1:88,442

Author: shenanewman

Date Exported: 16/09/2022 11:51 AM

Spatial Reference
Name: GDA2020 MGA Zone 56

MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: June 2023
Obtained Date: 15th August 2023
Publication Date: 15th August 2023

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 4th August 2023 by the NSW Environment Protection Authority (EPA).

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	0	Next Sample September 2023				
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly	0					
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly	0					
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly	0					
	Conductivity	µs/cm							
	TDS	mg/L							

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	1	13/07/2023	15/06/2023	NA	NA	<5
	Conductivity	µs/cm							1320
	Oil & Grease	mg/L							<5
	pH	pH							8.20

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred from this monitoring location						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.	No discharge occurred during the reporting month						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from these monitoring locations						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
	Oil & Grease	mg/L	12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	pH	pH								
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
	pH	pH								
	TSS	mg/L								

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

MCC ID	Date	Start Time	Wind Speed (m/s)	MCCP $L_{Aeq\ 15min}$ dB	Limit $L_{Aeq\ 15min}$ (dB) Operations Criteria	MCCP $L_{Aeq\ 1min}$ dB	Limit $L_{A1\ (1\ min)}$ (dB) Operations Criteria	Weather Rain (mm)	Exceedance (Yes / No)
NM1	5/07/2023	22:30	0.4	<20	35	<20	45	0.0	No
NM2	5/07/2023	23:30	0.3	IA	39	IA	45	0.0	No
NM3	6/07/2023	00:23	0.2	IA	35	IA	45	0.0	No
NM4	5/07/2023	23:02	1.2	IA	35	IA	45	0.0	No
NM5	5/07/2023	22:00	0.1	IA	35	IA	45	0.0	No
NM6	5/07/2023	23:58	0.3	IA	35	IA	45	0.0	No

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	11	85.77	117.40	120	No
	Vibration	mm/s		11	0.12	0.58	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

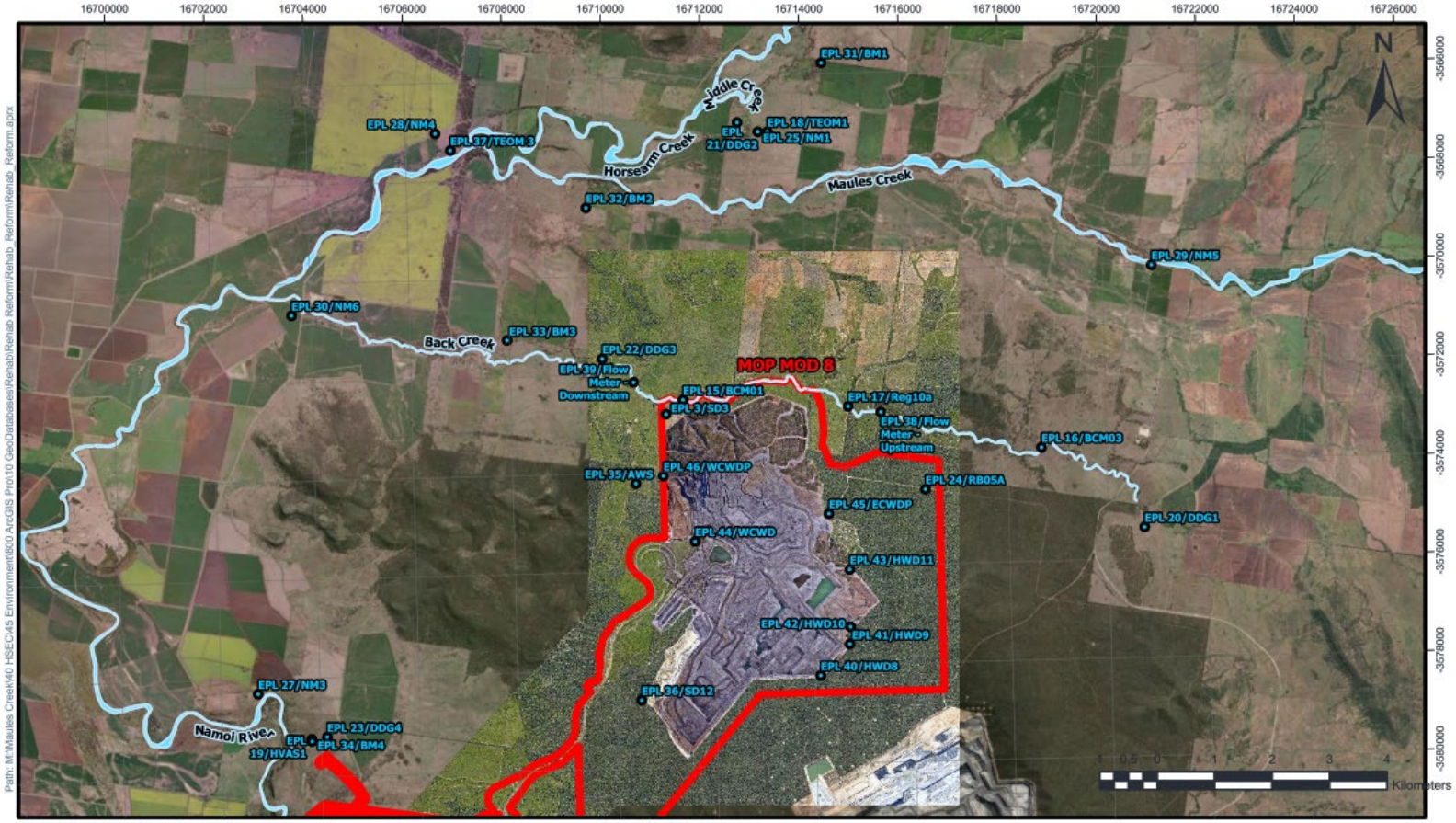
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m³ month	PM_{10}	8.5	30	No
37 (TEOM3)	Continuous	µg/m³ month	PM_{10}	13.1	30	No
19 (HVAS)	5 days	µg/m³	PM_{10}	11.4	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m² month	1.6	4	No
21 (DDG2/MC2)	Monthly	g/m² month	1.8	4	No
22 (DDG3/MC3)	Monthly	g/m² month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m² month	1.3	4	No

Figure 1 – EPL 20221 Monitoring Locations



EPL20221 Monitoring Locations - 2/08/2022

Maules Creek Coal

Legend

- EPL Monitoring locations

05 Project Boundary_Boundaries

- MCCM Project Boundary (Mod 8)

Scale: 1:88,442

Author: shenanewman

Date Exported: 16/09/2022 11:51 AM

Spatial Reference
Name: GDA2020 MGA Zone 56

MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: August 2023
Obtained Date: 16th September 2023
Publication Date: 18th September 2023

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 4th August 2023 by the NSW Environment Protection Authority (EPA).

WHITEHAVEN COAL

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	0	Next Sample September 2023				
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly	0					
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly	0					
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly	0					
	Conductivity	µs/cm							
	TDS	mg/L							

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	0	Next Sample September 2023				
	Conductivity	µs/cm							
	Oil & Grease	mg/L							
	pH	pH							

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred from this monitoring location						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.	No discharge occurred during the reporting month						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from these monitoring locations						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
	Oil & Grease	mg/L	12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	pH	pH								
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
	pH	pH								
	TSS	mg/L								

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

MCC ID	Date	Start Time	Wind Speed (m/s)	MCCP $L_{Aeq\ 15min}$ dB	Limit $L_{Aeq\ 15min}$ (dB) Operations Criteria	MCCP $L_{Aeq\ 1min}$ dB	Limit $L_{A1\ (1\ min)}$ (dB) Operations Criteria	Weather Rain (mm)	Exceedance (Yes / No)
NM1	3/08/2023	22:30	0.4	IA	35	IA	45	0.0	No
NM2	3/08/2023	23:30	0.3	<20	39	<20	45	0.0	No
NM3	4/08/2023	00:21	0.6	<20	35	<20	45	0.0	No
NM4	3/08/2023	23:00	0.5	IA	35	IA	45	0.0	No
NM5	3/08/2023	22:00	0.4	IA	35	IA	45	0.0	No
NM6	3/08/2023	23:55	0.3	IA	35	IA	45	0.0	No

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	11	92.08	108.60	120	No
	Vibration	mm/s		11	0.19	0.80	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

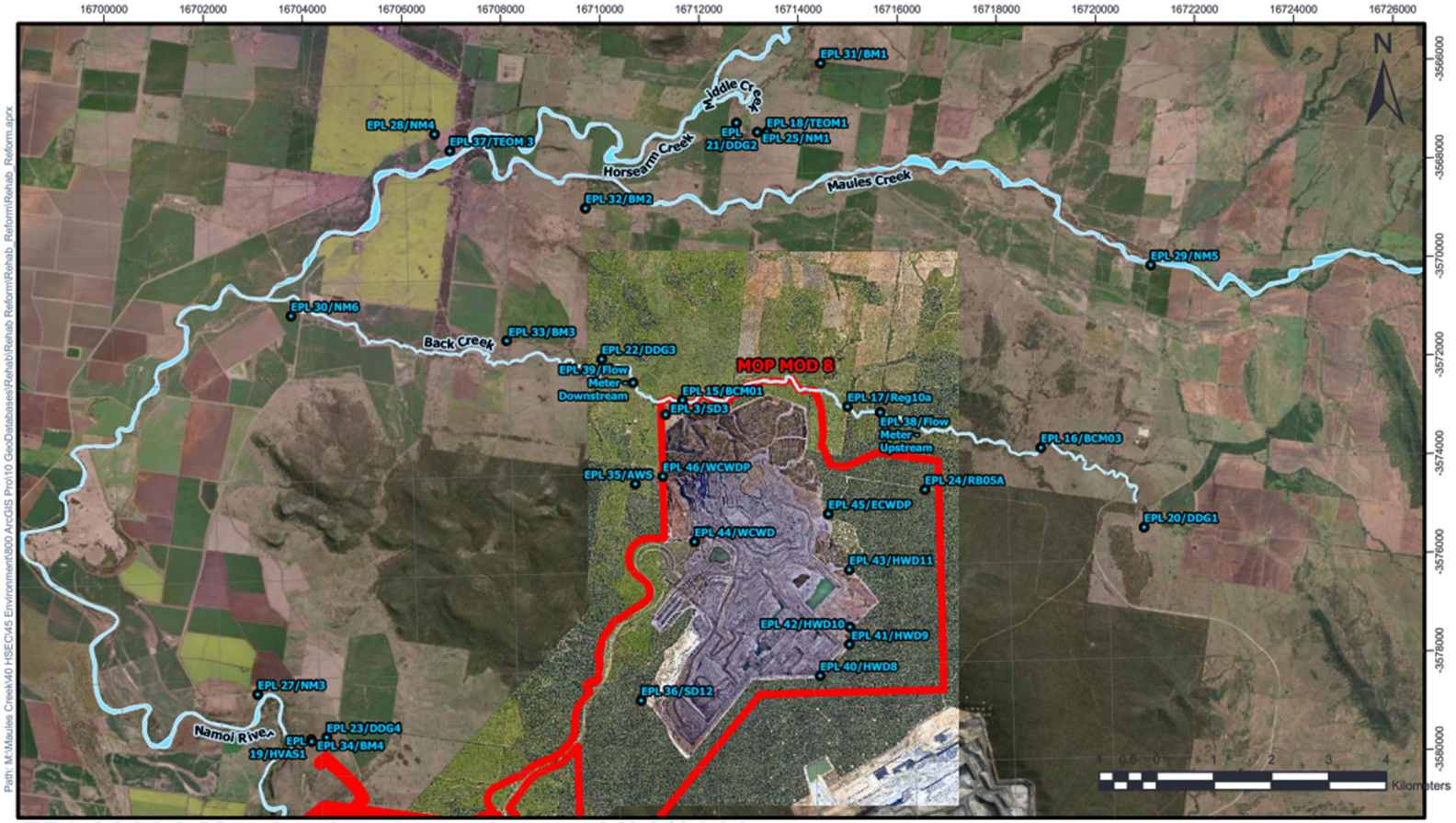
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m^3 month	PM_{10}	8.8	30	No
37 (TEOM3)	Continuous	µg/m^3 month	PM_{10}	12.9	30	No
19 (HVAS)	5 days	µg/m^3	PM_{10}	12.5	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m^2 month	1.4	4	No
21 (DDG2/MC2)	Monthly	g/m^2 month	1.8	4	No
22 (DDG3/MC3)	Monthly	g/m^2 month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m^2 month	1.2	4	No

Figure 1 – EPL 20221 Monitoring Locations



EPL20221 Monitoring Locations - 2/08/2022

Maules Creek Coal

Legend

- EPL Monitoring locations

05 Project Boundary_Boundaries

- MCCM Project Boundary (Mod 8)

Scale: 1:88,442

Author: shenanewman

Date Exported: 16/09/2022 11:51 AM

Spatial Reference
Name: GDA2020 MGA Zone 56

MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: September 2023
Obtained Date: 15th October 2023
Publication Date: 18th October 2023

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 4th August 2023 by the NSW Environment Protection Authority (EPA).

WHITEHAVEN COAL

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	0	Dry				
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly	0	Dry				
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly	0	Dry				
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly	1	31/8/23	Yes			7.69
	Conductivity	µs/cm							1820
	TDS	mg/L							1150

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	1	14/9/23	Yes			8
	Conductivity	µs/cm							1310
	Oil & Grease	mg/L							<5
	pH	pH							8.17

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred from this monitoring location						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.	No discharge occurred during the reporting month						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from these monitoring locations						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
	Oil & Grease	mg/L	12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	pH	pH								
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
	pH	pH								
	TSS	mg/L								

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

MCC ID	Date	Start Time	Wind Speed (m/s)	MCCP $L_{Aeq\ 15min}$ dB	Limit $L_{Aeq\ 15min}$ (dB) Operations Criteria	MCCP $L_{Aeq\ 1min}$ dB	Limit $L_{A1\ (1\ min)}$ (dB) Operations Criteria	Weather Rain (mm)	Exceedance (Yes / No)
NM1	18/09/23	22:31	0.4	IA	35	IA	45	0.0	No
NM2	18/09/23	23:30	0.3	IA	39	IA	45	0.0	No
NM3	18/09/23	23:53	0.6	<25	35	<25	45	0.0	No
NM4	18/09/23	23:00	0.5	IA	35	IA	45	0.0	No
NM5	18/09/23	22:00	0.4	IA	35	IA	45	0.0	No
NM6	18/09/23	23:55	0.3	IA	35	IA	45	0.0	No

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	11	90.47	109.00	120	No
	Vibration	mm/s		11	0.13	0.40	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

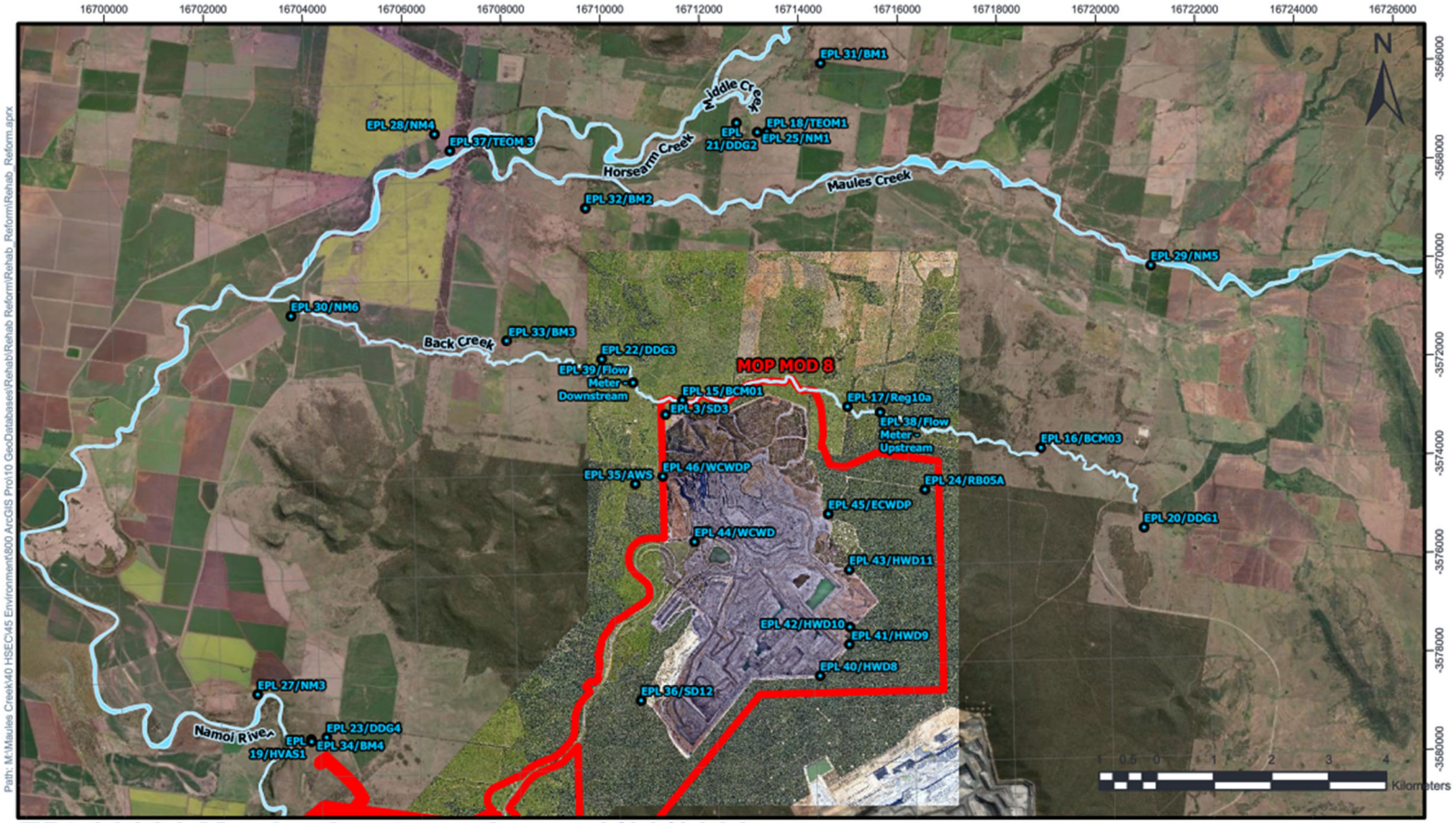
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m^3 month	PM_{10}	9.7	30	No
37 (TEOM3)	Continuous	µg/m^3 month	PM_{10}	12.9	30	No
19 (HVAS)	5 days	µg/m^3	PM_{10}	12.8	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m^2 month	1.5	4	No
21 (DDG2/MC2)	Monthly	g/m^2 month	2.0	4	No
22 (DDG3/MC3)	Monthly	g/m^2 month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m^2 month	1.2	4	No

Figure 1 – EPL 20221 Monitoring Locations



EPL20221 Monitoring Locations - 2/08/2022

Maules Creek Coal

Legend

- EPL Monitoring locations

05 Project Boundary_Boundaries

- MCCM Project Boundary (Mod 8)

Scale: 1:88,442

Author: shenanewman

Date Exported: 16/09/2022 11:51 AM

Spatial Reference
Name: GDA2020 MGA Zone 56

MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: October 2023
Obtained Date: 15th November 2023
Publication Date: 16th November 2022

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 2nd August 2022 by the NSW Environment Protection Authority (EPA).

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	Next sample in December 2023					
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	1	11/10/2023	15/11/2023	NA	NA	<5
	Conductivity	µs/cm							1340
	Oil & Grease	mg/L							<5
	pH	pH							8.06

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred from this monitoring location						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 -within 12 hours of discharge from any discharge location.	No discharge occurred during the reporting month						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 -within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from these monitoring locations						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period							
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from this monitoring location						
	Conductivity	µs/cm								
	Oil & Grease	mg/L								
	pH	pH								

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred from this monitoring location						

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

MCC ID	Date	Start Time	Wind Speed (m/s)	MCCP LAeq 15min dB	Limit $L_{Aeq\ 15min}$ (dB) Operations Criteria	MCCP LAeq 1min dB	Limit $L_{A1\ (1\ min)}$ (dB) Operations Criteria	Weather Rain (mm)	Exceedance (Yes / No)
NM1	18/10/2023	22:30	3.3	IA	35	IA	45	0.0	No
NM2	18/10/2023	23:30	3.3	<20	39	25	45	0.0	No
NM3	19/10/2023	00:19	2.8	<25	35	27	45	0.0	No
NM4	18/10/2023	23:00	1.6	<20	35	<20	45	0.0	No
NM5	18/10/2023	22:00	3.9	IA	35	IA	45	0.0	No
NM6	18/10/2023	23:55	3.2	IA	35	IA	45	0.0	No

MCC ID = Locations as per the EPL No.20221.
ND = No data due to high prevailing winds during the attended noise monitoring event.
Italicised text indicates wind speed exceeds the 3.0m/s maximum for noise monitoring.
NM = Not Measurable. If site noise is noted as NM, <20 dB or <30 dB, this means some noise was audible but could not be quantified.
IA = Site noise was inaudible at the monitoring location.
N/A in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in the project approval.

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	9	94.7	108.3	120	No
	Vibration	mm/s		9	0.17	0.52	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

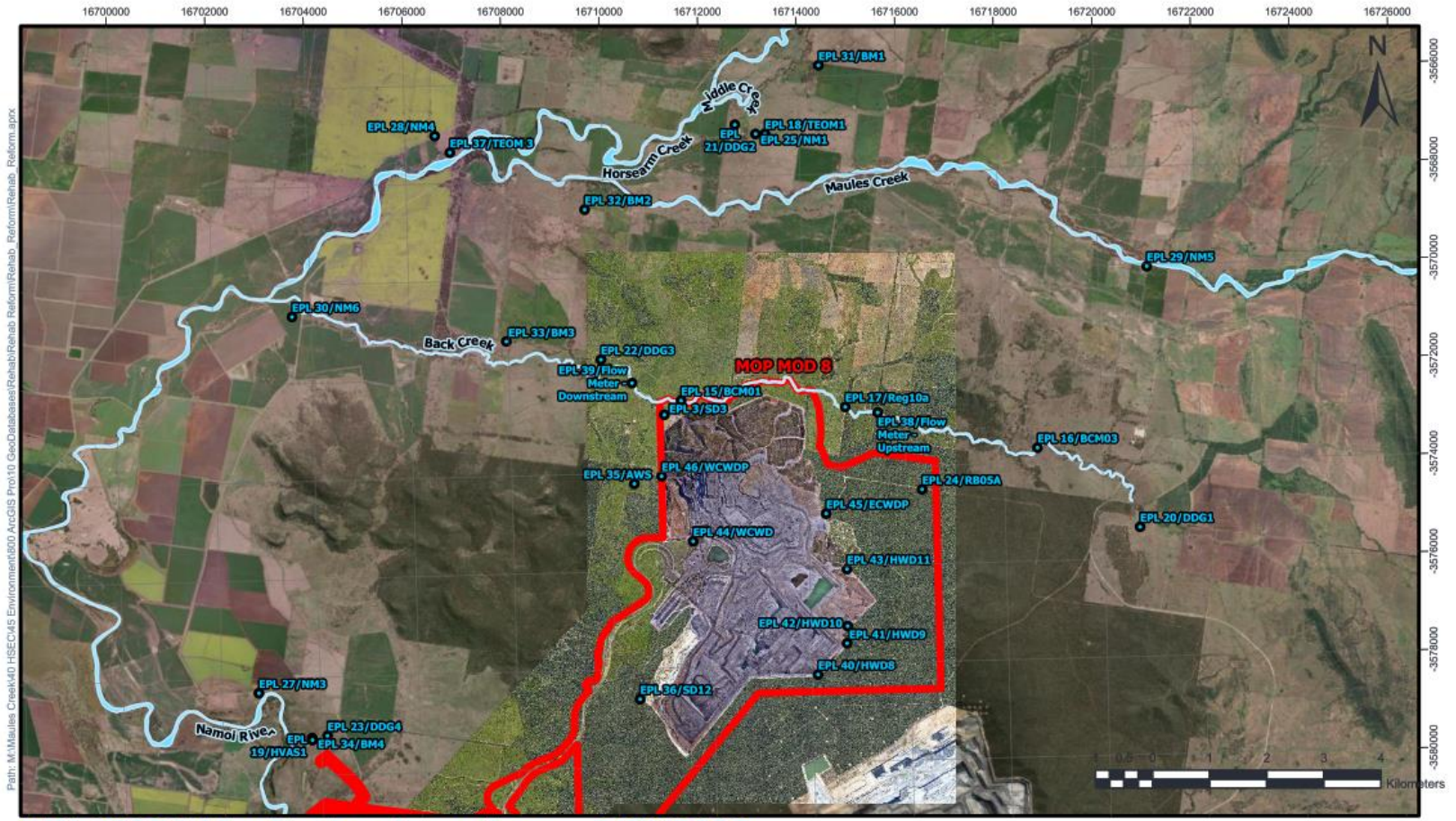
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m³ month	PM_{10}	10.4	30	No
37 (TEOM3)	Continuous	µg/m³ month	PM_{10}	13.2	30	No
19 (HVAS)	5 days	µg/m³	PM_{10}	14.0	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m² month	1.5	4	No
21 (DDG2/MC2)	Monthly	g/m² month	2.1	4	No
22 (DDG3/MC3)	Monthly	g/m² month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m² month	1.3	4	No

Figure 1 – EPL 20221 Monitoring Locations



MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: November 2023
Obtained Date: 15th December 2023
Publication Date: 18th December 2023

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 2nd August 2022 by the NSW Environment Protection Authority (EPA).

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	Next sample in December 2023					
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly						
	Conductivity	µs/cm							
	TDS	mg/L							

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	1	08/11/23	15/12/2023	N/A	N/A	65
	Conductivity	µs/cm							1310
	Oil & Grease	mg/L							<5
	pH	pH							8.2

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred at these locations in November 2023						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

WHITEHAVEN COAL

Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.	No discharge occurred at these locations in November 2023						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								

	TSS	mg/L		
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred at these locations in November 2023
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or	
	Conductivity	µs/cm		
	Oil & Grease	mg/L		

	pH	pH	within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred at these locations in November 2023
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day	
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
	Conductivity	µs/cm		

	Oil & Grease	mg/L	consecutive period	
	pH	pH		
45 (ECWDP)	Oil & Grease	mg/L	not more than 12 hours after discharge commences	No discharge occurred at these locations in November 2023
	pH	pH		
	TSS	mg/L		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
46 (WCWDP)	Oil & Grease	mg/L	not more than 12 hours after discharge commences	
	pH	pH		
	TSS	mg/L		
	Oil & Grease	mg/L		
	pH	mg/L		
	TSS	pH		

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

MCC ID	Date	Start Time	Wind Speed (m/s)	MCCP $L_{Aeq\ 15min}$ dB	Limit $L_{Aeq\ 15min}$ (dB) Operations Criteria	MCCP $L_{Aeq\ 1min}$ dB	Limit $L_{A1\ (1\ min)}$ (dB) Operations Criteria	Weather Rain (mm)	Exceedance (Yes / No)
NM1	8/11/2023	22:30	3.1	IA	35	IA	45	0.0	No
NM2	8/11/2023	23:30	4.1	IA	39	IA	45	0.0	No
NM3	9/11/2023	00:20	3.4	IA	35	IA	45	0.0	No
NM4	8/11/2023	23:00	3.4	IA	35	IA	45	0.0	No
NM5	8/11/2023	22:00	0.4	IA	35	IA	45	0.0	No
NM6	8/11/2023	23:55	3.7	NM	35	NM	45	0.0	No

MCC ID = Locations as per the EPL No.20221.
ND = No data due to high prevailing winds during the attended noise monitoring event.
Italicised text indicates wind speed exceeds the 3.0m/s maximum for noise monitoring.
NM = Not Measurable. If site noise is noted as NM, <20 dB or <30 dB, this means some noise was audible but could not be quantified.
IA = Site noise was inaudible at the monitoring location.
N/A in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in the project approval.

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	7	93.74	114.50	120	No
	Vibration	mm/s		7	0.11	0.27	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

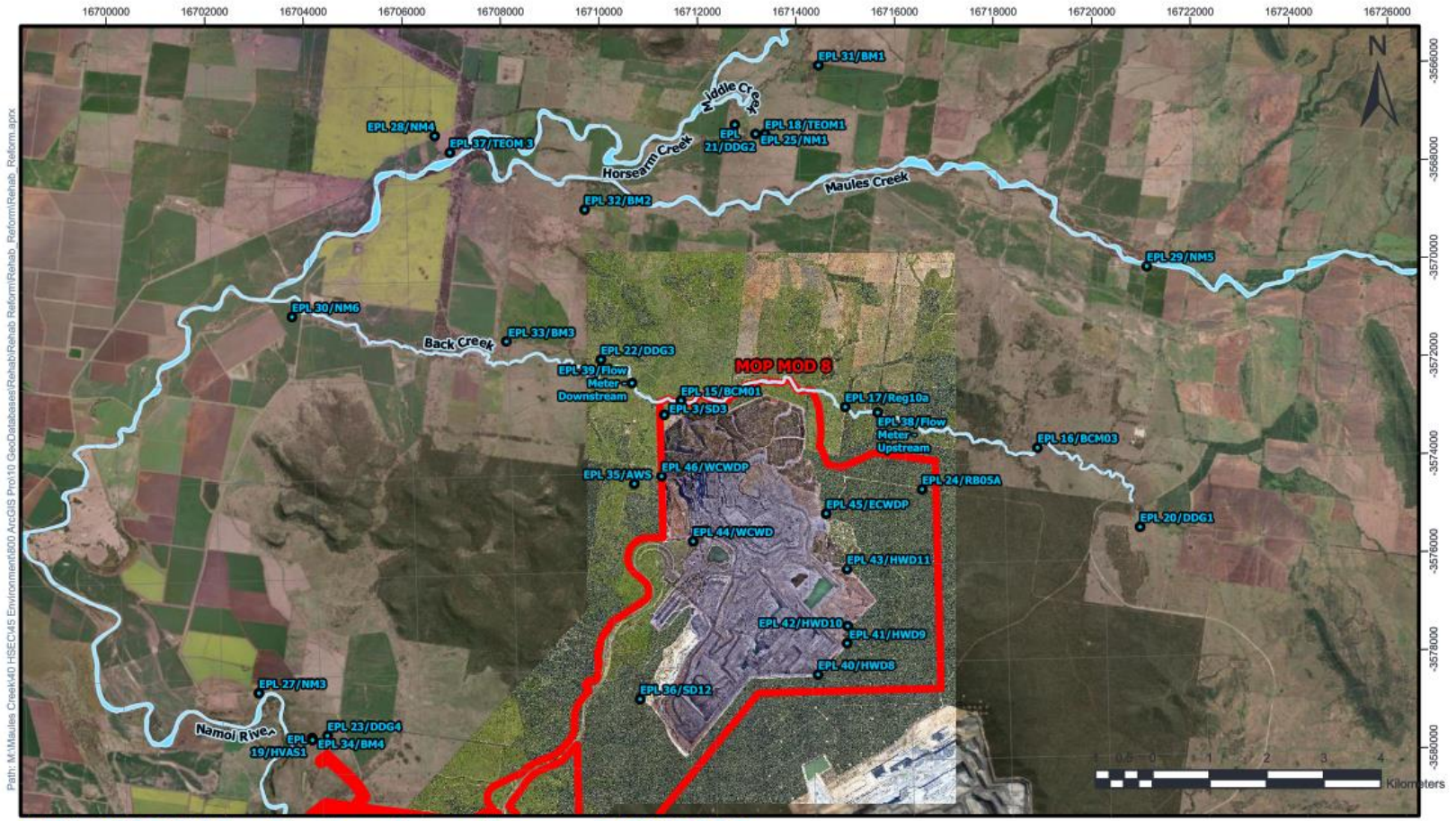
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m³ month	PM_{10}	10.9	30	No
37 (TEOM3)	Continuous	µg/m³ month	PM_{10}	13.6	30	No
19 (HVAS)	5 days	µg/m³	PM_{10}	15.0	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m² month	1.5	4	No
21 (DDG2/MC2)	Monthly	g/m² month	2.1	4	No
22 (DDG3/MC3)	Monthly	g/m² month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m² month	1.2	4	No

Figure 1 – EPL 20221 Monitoring Locations



EPL20221 Monitoring Locations - 2/08/2022

Maules Creek Coal

Legend

- EPL Monitoring locations

05 Project Boundary_Boundaries

- MCCM Project Boundary (Mod 8)

Scale: 1:88,442

Author: shenanewman

Date Exported: 16/09/2022 11:51 AM

Spatial Reference
Name: GDA2020 MGA Zone 56

MAULES CREEK COAL MINE – MONTHLY MONITORING SUMMARY

Site Information

EPL No: 20221
EPA Website Link: **Hyperlink to Maules Creek Coal, Environment Protection Licence**
Licensee: Maules Creek Coal Mine Pty Ltd
Licensee Address: Maules Creek Coal Mine, Therribri Road, BOGGABRI NSW 2382
EPL Monitoring Points: See Figure 1 below
Sampling Period: December 2023
Obtained Date: 15th January 2024
Publication Date: 16th January 2024

Context: This Monthly Monitoring Summary aligns with the Environment Protection Licence (EPL) No. 20221 – Maules Creek Coal Mine issued 2nd August 2022 by the NSW Environment Protection Authority (EPA).

WHITEHAVEN COAL

Monthly Monitoring Summary

Ground Water Monitoring

Table 1 – Groundwater Quality Monitoring

ID EPL (Bore)	Parameters	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
15 (BCM01)	pH	pH	Quarterly	0	Dry				
	Conductivity	µs/cm							
	TDS	mg/L							
16 (BCM03)	pH	pH	Quarterly	0	Dry				
	Conductivity	µs/cm							
	TDS	mg/L							
17 (REG10A)	pH	pH	Quarterly	0	Dry				
	Conductivity	µs/cm							
	TDS	mg/L							
24 (RB05A)	pH	pH	Quarterly	1	29/11/23	Yes			7.56
	Conductivity	µs/cm							1910
	TDS	mg/L							1140

Surface Water Monitoring

Table 2 – Surface Water Monitoring – Mine Void

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min	Mean	Max / Only Value
12 (Mine Void)	TSS	mg/L	Every 2 months	Next sample in January 2024					
	Conductivity	µs/cm							
	Oil & Grease	mg/L							
	pH	pH							

Table 3 – Wet Weather Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
3 (SD3)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36.	No discharge occurred at these locations in December 2023						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
36 (SD12)	Conductivity	µs/cm	Special Frequency 1 - within 12 hours of discharge from EPL 3 or 36							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								

WHITEHAVEN COAL

Table 4 – Clean Water Discharge - Surface Water Monitoring

ID EPL (Site)	Parameter	Units	Frequency	Samples	Date	Laboratory Results Received	Min Value	Mean Value	Median Value	Max / Only Value
38 (Flow Meter Upstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.	No discharge occurred at these locations in December 2023						
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
39 (Flow Meter downstream)	Conductivity	µs/cm	Special Frequency 3 - within 12 hours of discharge from any discharge location.							
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								
	TSS	mg/L								
	Conductivity	µs/cm								
	Nitrate	mg/L								
	Nitrogen (total)	mg/L								
	Oil & Grease	mg/L								
	pH	pH								
	Phosphorous	mg/L								
	Reactive Phosphorous	mg/L								

	TSS	mg/L		
40 (HWD8)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
41 (HWD9)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred at these locations in December 2023
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
42 (HWD10)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or	
	Conductivity	µs/cm		
	Oil & Grease	mg/L		

	pH	pH	within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	
43 (HWD11)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day consecutive period	No discharge occurred at these locations in December 2023
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
44 (WCWD)	TSS	mg/L	Special Frequency 2 – prior to discharging from EPL 45 and/or 46 or within 12hours of discharge caused by 38.4mm in a 5 Day	
	Conductivity	µs/cm		
	Oil & Grease	mg/L		
	pH	pH		
	TSS	mg/L		
	Conductivity	µs/cm		

	Oil & Grease	mg/L	consecutive period	
	pH	pH		
	pH	pH		
	TSS	mg/L		
	Oil & Grease	mg/L		
	pH	mg/L		
	TSS	pH		

Noise Monitoring

Table 6 – Noise Monitoring (Attended – Measured)

MCC ID	Date	Start Time	Wind Speed (m/s)	MCCP $L_{Aeq\ 15min}$ dB	Limit $L_{Aeq\ 15min}$ (dB) Operations Criteria	MCCP $L_{Aeq\ 1min}$ dB	Limit $L_{A1\ (1\ min)}$ (dB) Operations Criteria	Weather Rain (mm)	Exceedance (Yes / No)
NM1	11/12/2023	22:30	1.0	IA	35	IA	45	0.0	No
NM2	11/12/2023	23:30	<0.5	IA	39	IA	45	0.0	No
NM3	12/12/2023	00:20	<0.5	<20	35	<20	45	0.0	No
NM4	11/12/2023	23:00	3.7	IA	35	IA	45	0.0	No
NM5	11/12/2023	22:00	<0.5	IA	35	IA	45	0.0	No
NM6	11/12/2023	23:55	1.5	IA	35	IA	45	0.0	No

MCC ID = Locations as per the EPL No.20221.
ND = No data due to high prevailing winds during the attended noise monitoring event.
Italicised text indicates wind speed exceeds the 3.0m/s maximum for noise monitoring.
NM = Not Measurable. If site noise is noted as NM, <20 dB or <30 dB, this means some noise was audible but could not be quantified.
IA = Site noise was inaudible at the monitoring location.
N/A in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in the project approval.

Table 7 - Noise Monitoring (Attended - Low Frequency Assessment)

None of the measurements satisfied the conditions for further assessment when assessed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry. Therefore, no further assessment of low frequency noise was required to be undertaken.

Blast Monitoring

Table 8 – Blast Monitoring (Blasts – Limits Apply)

Location	Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Operations Blasts	Overpressure	Db (Lin Peak)	All	8	90.73	109	120	No
	Vibration	mm/s		8	0.10	0.41	10	No

Note: As of March 2018, in accordance with the requirements of the approved variation of EPL 20221; M7.1 blast monitoring results are for four blast monitoring points 31 (BM1), 32 (BM2), 33 (BM3) and 34 (BM4).

Air Quality Monitoring

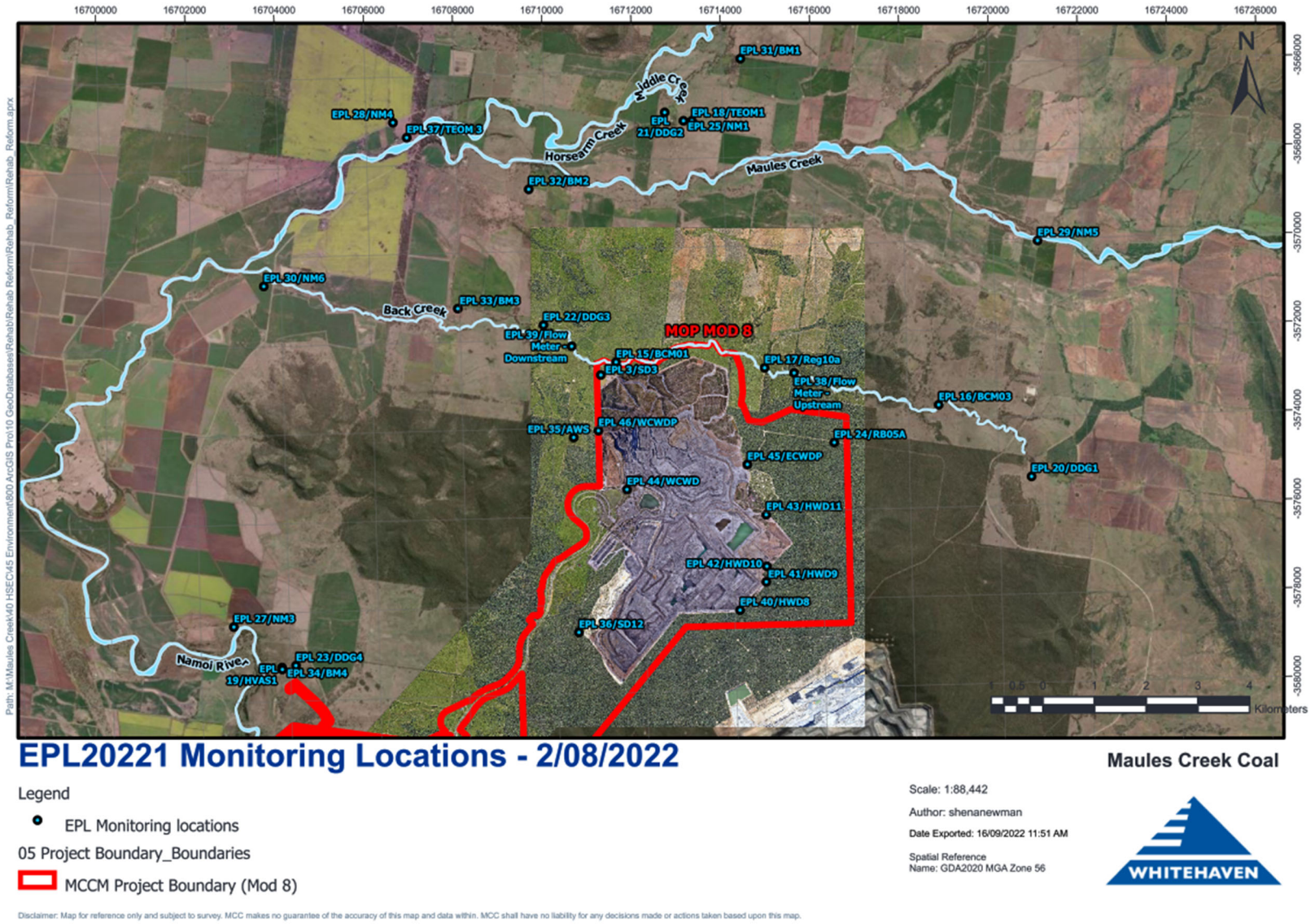
Table 9 – PM_{10} (Limits Apply)

ID EPL (Site)	Sample period	Unit	Parameter	Rolling Annual Average	NEPM Annual Criteria	Exceedance (Yes / No)
18 (TEOM1)	Continuous	µg/m^3 month	PM_{10}	11.9	30	No
37 (TEOM3)	Continuous	µg/m^3 month	PM_{10}	14.2	30	No
19 (HVAS)	5 days	µg/m^3	PM_{10}	15.6	30	No

Table 10 – Depositional Dust (Limits Apply)

ID EPL (Site)	Sample period	Particulates Deposited Matter	Rolling Annual Average Insoluble Solids	Criteria	Exceedance (Yes / No)
20 (DDG1/MC1)	Monthly	g/m^2 month	1.7	4	No
21 (DDG2/MC2)	Monthly	g/m^2 month	2.0	4	No
22 (DDG3/MC3)	Monthly	g/m^2 month	2.5	4	No
23 (DDG4/MC4)	Monthly	g/m^2 month	1.1	4	No

Figure 1 – EPL 20221 Monitoring Locations



Month of EPL Report:	Date of Original Publishing	Date Of Correction	Date of Republishing	Correction/s made
March 2023	19/04/2023	11/01/2024	11/01/2024	• Table 5 amended Data entered was incorrect, updated to reflect correct data
April 2023	16/05/2023	11/01/2024	11/01/2024	• Table 5 amended Data entered amended to reflect correct monitoring location.